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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| 08/903,944 | 07/31/97 | CHOU | 089166/0107 |

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HM21/0925

EXAMINER
WAL, T

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 1649 | 7 |

DATE MAILED: 09/25/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/903,944

Applicant(s)
Chou et al.

Examiner
Thanda Wai

Group Art Unit
1649



☒ Responsive to communication(s) filed on 03-27-98, 04-27-98, and 06-09-98.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-96 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-96 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 4, and in claims 2-5 dependent thereon, the meaning of the phrase "capable of" is vague and indefinite.

In claim 1, line 5, and in claims 2-5 dependent thereon, the meaning of the phrase "callus induction medium" is vague and indefinite.

In claim 1, lines 6-7, and in claims 2-5 dependent thereon, the meaning of the phrase "embryo induction medium" is vague and indefinite.

In claim 1, line 10, and in claims 2-5 dependent thereon, the meaning of the phrase "developmental medium" is vague and indefinite.

In claim 1, lines 11-12, and in claims 2-5 dependent thereon, the meaning of the phrase "maturation medium" is vague and indefinite.

In claim 6, line 4, and in claims 7-38 dependent thereon, the meaning of the phrase "capable of" is vague and indefinite.

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In claim 6, line 5, and in claims 7-38 dependent thereon, the meaning of the phrase “callus induction medium” is vague and indefinite.

In claim 6, lines 6-7, and in claims 7-38 dependent thereon, the meaning of the phrase “embryo induction medium” is vague and indefinite.

In claim 6, line 24, and in claims 7-38 dependent thereon, the meaning of the phrase “developmental medium” is vague and indefinite.

In claim 6, lines 25-26, and in claims 7-38 dependent thereon, the meaning of the phrase “maturation medium” is vague and indefinite.

Claim 6 and claims 7-38 dependent thereon are unduly alternative in the recitation of steps c or c'. Therefore, the claims are vague and indefinite.

In claim 39, line 4, and in claims 40-72 dependent thereon, the meaning of the phrase “capable of” is vague and indefinite.

In claim 39, lines 5, 6, 16-17, and 19, and in claims 40-72 dependent thereon, the meaning of the phrase “callus induction medium” is vague and indefinite.

In claim 39, lines 7-8, 10-11, and 13, and in claims 40-72 dependent thereon, the meaning of the phrase “embryo induction medium” is vague and indefinite.

In claim 39, line 36, and in claims 40-72 dependent thereon, the meaning of the phrase “developmental medium” is vague and indefinite.

In claim 39, lines 15, and in claims 40-72 dependent thereon, the meaning of the phrase “maturation medium” is vague and indefinite.

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Claim 39 and claims 40-72 dependent thereon are unduly alternative in the recitation of steps h or h'. Therefore, the claims are vague and indefinite.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claim 73 is rejected under 35 U.S.C. 102(a) as being anticipated by Cheetham et al. (1996).

Claim 73 is drawn to a transgenic poinsettia plant comprising at least one expression vector, wherein the expression vector comprises at least one foreign gene, and wherein the transgenic poinsettia plant expresses the foreign gene.

Cheetham et al. teach transformation of poinsettia using *Agrobacterium rhizogenes* (page 511, abstract). Transformation was verified, among other techniques, by the detection of mannopine, the product of a heterologous gene expressed upon integration into the plant genome (page 513, paragraph 2). Therefore, the reference clearly anticipates a transgenic poinsettia plant expressing a foreign heterologous gene.

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 74-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheetham et al (1996).

Claims 74-96 are drawn further to transgenic poinsettia plants comprising various promoters or genes.

Cheetham et al. teaches transgenic poinsettia plants as state above.

It would have been obvious to one of ordinary skill in the art at the time that the invention was made to have used *any* known promoter or heterologous gene in place of the ones used in the reference. Therefore, the invention as a whole was *prima facie* obvious absent evidence to the contrary.

7. Claims 1-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheetham et al. (1996); in view of Preil (1994) and Nataraja (1975).

Claims 1-5 are drawn to a method for *in vitro* regeneration of poinsettia plants comprising incubating poinsettia plant tissue explants on callus induction medium, subculturing reddish epidermal callus on embryo induction medium comprising casein hydrolysate to form embryogenic

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callus, culturing the embryogenic callus on developmental medium, then maturation medium, and recovering poinsettia plants from the embryos; and claims 6-38 are drawn further to a method of producing transgenic poinsettia plants by introducing expression vectors at the embryogenic callus stage. Claims 39-72 are drawn to a method for producing transgenic poinsettia plants comprising incubating poinsettia plant tissue explants in callus induction medium, culturing embryogenic callus produced of the callus induction medium in liquid embryo induction medium, filtering the culture and culturing the filtrate in fresh liquid embryo induction medium, culturing embryos on maturation, then induction medium, introducing expression vectors, and further culturing and selecting transgenic embryos and plants.

Cheethan et al. teach a method of transforming poinsettia with *Agrobacterium rhizogenes* by introducing the bacterium into a wound site, allowing the wound to develop callus, then placing the rooted callus on media, which includes BAP, NAA, and mannitol, among other components (pge 512, paragraphs 4). The reference does not teach an *in vitro* method of regenerating poinsettia plants comprising cuturing callus in embryo induction medium comprising casein hydrolysate or culturing callus in liquid embryo induction medium.

Preil teaches a method of culturing poinsettia *in vitro* in which stem segments are placed on callus induction medium, then transferred to somatic embryogenesis induction medium, then somatic embryo maturation medium (page 51, paragraph 1). The reference also teaches a procedure for establishing suspension cultures by filtering the stock suspension cultures (paragraph bridging pages 50-51).

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Nataraja teaches culturing seeds of poinsettia to make callus by incubating with various supplements including casein hydrolysate (page 136, paragraph 2).

It would have been obvious to one of ordinary skill in the art at the time that the invention was made to transform poinsettia callus as taught by Cheethan et al., Preil, or Nataraja by introducing heterologous genes in a vector such as *Agrobacterium* as taught by Cheetham et al. The motivation to to culture poinsettia in vitro comes from Preil who states that such techniques are necessary for breeding purposes (page 49, paragraph 1). Therefore, it would have been obvious to optimize callus culture procedures taught by Preil by adding different supplements as taught by Nataraja. Therefore, the invention as a whole was *prima facie* obvious absent evidence to the contrary.

8. No claims are allowed.

9. Certain papers related to this application may be submitted to Art Unit 1649 by facsimile transmission. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)). The fax telephone numbers for the Technology Center 1600 are (703) 308-4242 and (703) 305-3014. NOTE: If Applicant does submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

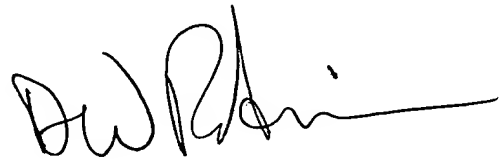
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Thanda Wai whose telephone number is (703) 308-3693. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Doug Robinson can be reached on (703) 308-2897. The fax telephone numbers for the Technology Center are (703) 308-4242 and (703) 305-3014.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center Receptionist whose telephone number is (703) 308-0196.

Thanda Wai, Ph.D.
September 23, 1998

A handwritten signature in black ink, appearing to read 'DW Robinson', with a long horizontal flourish extending to the right.

Douglas W. Robinson
Supervisory Patent Examiner
Technology Center 1600